1 – COMPONENTS OF THE STATE FOREST PLAN

1.1 - Purpose & Use of the Plan

In 2004, the State Legislature enacted Part 525, Sustainable Forestry on State Forestlands, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Appendix A). As defined by Part 525, sustainable forestry means forestry practices that are designed to meet present and future needs by employing a land stewardship ethic that integrates the reforestation, managing, growing, nurturing, and harvesting of trees for useful products with the conservation of soil, air and water quality, wildlife and fish habitat, and visual qualities. To foster sustainable forestry upon land owned by the Michigan Department of Natural Resources (DNR), Section 52503 of Part 525 requires the DNR to adopt a forestry development, conservation, and recreation management plan for state-owned lands. A primary purpose of this plan is to improve the sustainable management of the State Forest while also meeting the requirements of Part 525.

Section 52505 of Part 525 also required the DNR to seek and maintain a third party certification of the management of the state forest that satisfies the sustainable forestry standards of at least one credible certification program. Certification was required by January 1, 2006. The DNR sought forest management certification under two standards:

1. The Regional Forest Stewardship Standard for the Lake States-Central Hardwoods Region (USA), as approved by the Forest Stewardship Council (FSC)-US Board on February 7, 2002, and accredited by FSC International on August 5, 2002. Initial FSC certification was granted to the DNR on December 31, 2005.

2. The Sustainable Forestry Initiative (SFI) 2005-2009 Standard as adopted by the Sustainable Forestry Board, Inc. on January 10, 2005. Initial SFI certification was granted to the DNR on December 14, 2005.

Principle 7 of the FSC standard and Objective 1 of the SFI standard requires the development and maintenance of a forest management plan (Appendix B and C respectively). The certification standards require strategic, long-term, landscape planning. Thus, another purpose of this document is to satisfy these certification requirements.

The last statewide forest resources plan for the DNR was approved by the Natural Resources Commission on November 5, 1982 and is effectively known as the Statewide Forest Resources Plan of 1983. This document will update that portion of the 1983 plan concerning DNR Forest Lands.

1.2 - Plan Organization and Relationship to Other Plans

The DNR currently has many plans, programs, and activities that address management of individual or multiple natural resource elements, flora, fauna, watersheds, and/or ecosystems. The number of programs and the geographic scale of the State Forest system precludes the integration of all these plans into a single comprehensive plan. So in lieu of a comprehensive plan the DNR operates under a suite of management plans that when considered as a whole form a compendium of planning initiatives that represent an over-arching management program for the state's natural resources. A summary of these

planning processes and the plans themselves are available upon the DNR Forest Certification website. A subset of this suite of plans includes:

- The 2006 State Forest Management Plan
- Ecoregional Management Plans (Presently being drafted)
- The Annual Plan of Work for prescribed forest treatments.
- The Wildlife Action Plan
- Conservation Area Management Guidelines
- River Assessment and River Management Plans
- DNR Silvicultural Guidelines
- Annual Management Review

The key planning components that will guide forest operations are the first three documents: the 2006 State Forest Management Plan, Ecoregional Management Plans, and the Annual Plan of Work that is derived from the 10-year planning cycle for annual compartment reviews. Each of these planning components incorporates specific division goals and objectives into an integrated management direction. The other listed documents support the plans by providing more detailed planning and guidance for specific resource areas.

The 2006 State Forest Management Plan contains management direction that provides landscape-level desired future conditions (DFCs), goals, objectives, standards and guidelines for the sustainable management of the State Forest System. These are intended for reference and adaptation by Ecoregional Teams (Eco-Teams) for drafting specific ecoregional management plans. Ecoregional statements of desired future conditions, goals and objectives will be consistent with statewide direction. The desired future conditions and goals outlined in the SFMP are intended for reference by stakeholders, other governmental units, and partners throughout the state and for adaptation and implementation by the managers of other State-owned resources.

The Annual Plan of Work is operationally implemented by Operations Inventory and Compartment Review Procedures, as contained in FMFMD Policy and Procedure 441 dated January 19, 2000. Annual compartment reviews by year of entry are conducted at the Forest Management Unit (FMU) level, and these reviews represent the tactical level of planning for forest operations. Proposed forest treatments that are considered during compartment review will be guided by desired future conditions, goals and objectives contained in ecoregional management plans.

1.3 - Plan Communications, Implementation & Review Requirements

This plan shall be communicated to all DNR staff, and made available to the general public via the DNR internet web site or upon request.

The plan will be considered to be implemented upon the effective date of signature the Director of the Michigan Department of Natural Resources.

As discussed further in Chapter 6, this plan will be reviewed for revision every 10 years.

1.4 – Mission, Vision and Strategic Goals for DNR-Managed Forest Lands

1.4.1 - DNR Mission and Vision for the State Forest

In the context of public trust responsibilities that consider interests of all current and future citizens in the State's natural resources, the DNR has adopted the following mission statement:

The Department of Natural Resources is committed to the conservation, protection, management, use, and enjoyment of the State's natural resources for current and future generations.

The DNR has a vision of the desired future conditions of DNR-managed forest lands that is related to long-term management objectives. When these objectives are achieved the State Forest will:

1. Sustain fundamental ecological processes and functions that, in turn support representative, diverse, and productive biological assemblages.
2. Provide for a variety of ecosystem services that help sustain human civilization, including purification of air and water, carbon storage, provision of habitat and moderation of drought and flood conditions.
3. Provide for a variety of sustainable human values that are derived from ecosystems, including economic, recreational and intrinsic values.

1.4.2 - DNR Strategic Goals

The DNR sets forth the following long-term strategic goals to guide our steps towards sustainable, ecosystem-based management of DNR-managed forest lands:

Ecological Goals

Goal 1. Practice Sustainable, Ecosystem-based Management. Resource planning and operations shall be conducted to maintain the long-term integrity, representation, diversity, and productivity of terrestrial and aquatic ecosystems; with recognition of valued human activities and uses derived from these systems. Fundamental processes, functions, and values of ecosystems shall be protected or rehabilitated. In doing so, the following set of objectives shall be followed:

Objective 1.1 – Conserve Geophysical Processes. Emphasize conservation and rehabilitation of geo-physical processes such as soils formation, geomorphic sediment dynamics, carbon dynamics, hydrologic dynamics, and nutrient dynamics. Such processes are the foundation of the habitat conditions required to sustain desired biological assemblages.

Objective 1.2 – Conserve Biodiversity. Encourage the management of intact, functional landscapes, ecosystems, and communities that will achieve the conservation of representative biological assemblages, including rare species; maintaining statewide biological diversity at ecosystem, species, and genetic levels.

Objective 1.3 – Maintain Biotic Productivity. Manage lands in a manner to protect, maintain, and rehabilitate ecosystem processes and habitats to ensure sustainable production of desired forest, wildlife, and fishery resources.

Social-Economic Goals

Goal 2. Maintain Essential Ecosystem Services. – Resource planning and operations shall ensure the variety of ecosystem services.

Goal 3. Sustain Social-Economic Values. – Resource planning and operations shall encourage the efficient and sustainable production of desired forest, mineral, wildlife, and fishery resources to provide a range of social and economic benefits.

Goal 4. Provide Public Access. Resource planning and operations shall protect and preserve the natural, historic, and cultural features of DNR-managed lands while providing appropriate public access to these resources. In doing so, the following set of objectives shall be followed:

Objective 4.1 Provide Recreational Opportunities. Provide for a variety of active and passive recreational opportunities, tailored to specific local ecological and social characteristics.

Objective 4.2 Provide Educational Opportunities. Provide public educational programs and opportunities that help build public understanding and appreciation for the important processes linking landscapes, ecosystems, habitats, and biological assemblages, and the human values and services derived from these natural systems.

Objective 4.3 Allow for Cultural Uses. Allow for cultural uses by indigenous peoples and others.

1.5 –DNR State Forest Land Management System

Traditional sustained yield management of forests became prominent in the United States in the late 19th century, and was generally adopted as management strategy by the present DNR in the early 20th century. There are a broad range of benefits and values that people desire from the State's natural resource base that are codified in plans, programs, and activities. Natural resources and human needs change over time - the challenge of natural resource management is to adapt and adjust plans and management activities to align with these changes while ensuring continued natural resource health into the future. The development and implementation of policies for sustainable resources is based on a number of overarching principles and approaches. These principles take a holistic view of resources, pursue multi-stakeholder engagement, plan for the long term, address local impacts, and promote sustainable development and uses.

To meet these challenges the DNR began a shift toward ecosystem management in the year 2000 for the planning and managing of Michigan's natural resources. In contrast to traditional sustained yield management, ecosystem management is a process that integrates biological, social and economic factors into a comprehensive strategy aimed at

protecting and enhancing the sustainability, diversity and productivity of natural resources (Figure 1.1). The key objective of sustained yield management is the production of forest products for human needs under the constraint of the minimizing adverse environmental impacts. Ecosystem management differs in that it considers sustainable ecological processes themselves as the key objective and output which in turn governs the sustained yield of products for human uses. At the stand and compartment level this requires that FMU operations be integrally related to larger landscape and ecoregional considerations, whereby FMU operational decisions take into account landscape level concepts that are consistent with and support ecoregional and statewide goals and objectives. Some of the other differences between traditional sustained-yield and ecosystem management strategies were outlined by the Society of American Foresters in 1993 (Figure 1.1).

At the tactical level, ecosystem management is applied by Forest Management Units (FMUs), where operational decisions take into account landscape-level concepts that are consistent with and support ecoregional and statewide goals and objectives. FMUs are comprised of compartments, which are blocks of land that are 1,000-3,000 acres in size. An inventory process divides compartments into stands, generally ranging in size from 10-100 acres. Compartments are grouped by years-of-entry. Each year-of-entry contains approximately 10 percent of the compartments in a FMU. At the end of ten years, all of the compartments within an FMU will have been inventoried and reviewed.

	Traditional Sustained-yield Management	Ecosystem Management
Objective Processes	Sustained flow of specific products to meet human needs, constrained to minimize adverse effects.	Maintains ecological and desired forest condition within which the sustained-yield of products to meet human needs are achieved.
Strategy for Accomplishment	Resembles the agricultural model.	Reflects patterns of natural disturbance.
System Character	Emphasizes production efficiency but within environmental constraints.	Retains complexity and processes, provides framework for the whole system.
Unit of Management	Stands and aggregations of stands within an ownership.	Landscapes and aggregations of landscapes across ownerships.
Time Unit	Multi-rotations with rotation length determined by land-owner objectives.	Multi-rotations with length reflecting natural disturbance, although intensive management will cause some to be shorter.
Current Status	In transition, new knowledge is bringing in new values. Remains a valid strategy for portions of the landscape.	Evolving, accepted for management on national and state forest lands.

Figure 1.1. A comparison of Management Strategies.
(SAF, 1993)

The inventory and decision making process applied to compartments is governed by Forest Mineral and Fire Management Division Policy and Procedure No. 441, Operations Inventory and Compartment Review Procedures, dated January 19, 2000, which directs that inventory operations and associated compartment reviews be conducted using the "Operations Inventory Field Manual".

Operations Inventory (O.I.) locates and identifies physical, biological, economic, and social information on each unit of land. It provides information for day-to-day operations relating to resource management issues such as timber, wildlife, forest recreation, water quality, reforestation, and land use. The O.I. system requires information that describes the composition of the stand, site factors, and a management prescription that supports State and Ecoregion goals and objectives for desired future conditions. In this process of integrated planning, it is critical that statewide and landscape level ecosystem considerations are incorporated in the development of management unit goals and objectives upon which compartment and stand prescriptions are then based. This is the primary means by which ecosystem-based management is achieved. Following a public open house, stand prescriptions are finalized at a multi-disciplinary compartment review to ensure a public and DNR-wide understanding of compartment and management unit goals.

As of 2005, the State Forest system is in the process of converting from O.I. to a new inventory system and GIS decision making environment known as, "Integrated Forest Monitoring, Assessment, and Prescription" (IFMAP). IFMAP's design will facilitate multi-scaled, ecosystem-based decision making.

To facilitate the implementation of DNR management within the context of forest certification requirements, existing DNR policies and procedures for operational management have been supplemented by Forest Certification Work Instructions (Appendix D). These were written to allow the DNR to meet the requirements of sustainable forest management as defined in the SFI and FSC certification standards. A sub-set of these work instructions are directly pertinent to and is required to be used by field staff in the course of daily forest operations.

1.6 - Use of Criteria and Indicators

Criteria and Indicators (C&I) provide a framework for gathering data necessary for discussing the importance, status, and sustainability of forest management. Criteria define broad categories of capacity, goals or processes that are essential to sustainable forest management. Criteria address biological diversity, ecosystem condition and productivity, social, cultural and spiritual values, recreation values, ownership patterns, economic health, institutional processes that support forest conservation and sustainable management.

Indicators are "gauges" to monitor how a system operates or functions. Any indicator by itself provides limited information about the system as a whole. To effectively monitor a complex system, such as a forest many indicators are required. The different values held by people about the environmental, social, and economic spheres of forests also require a large and diverse set of indicators to depict the many facets of forests and forest management. The information derived from monitoring changes in common indicators contributes to an improved understanding of the consequences of earlier decisions, which leads to informed decision making processes for sustainable forest management.

Metrics are used to identify data needed to measure indicators. They provide the means to measure or describe various aspects of the indicators, and are a tool used for monitoring the

progress toward achieving sustainable forest management. Metrics therefore need to be discrete, explicit and easy to quantify. The non-achievement of a metric or a significant change in a trend measured by a metric provides an indication that management processes may need to be adjusted or changed to meet management goals and objectives necessary to achieve a sustainable desired future condition for a specific ecological, social or economic value.

No criterion, indicator or metric alone can provide an adequate measure of forest sustainability. All criteria considered together provide a comprehensive picture of the status of forests and their management. The C&I used will likely be adapted over time to reflect experience gained with their use, new research findings, advances in technology, and public understanding of forests.

A core set of C&I for the State Forest were developed to provide a standardized statewide basis for ecoregional planning and monitoring (Appendix E). The DNR will use existing data as much as possible to track the metrics for the C&I. These data will come from a variety of sources including the DNR and other government agencies. For measurement purposes the C&I are grouped into tiers which are related to the present availability of data and the frequency with which the DNR intends to measure specific metrics. The measurement of metrics may also be subject to DNR manpower and budgetary constraints. If necessary, the DNR may seek means to measure additional metrics or to remove metrics that do not provide an effective measure of an indicator. Each Eco-Team may also develop and adopt additional C&I and metrics as part of their specific ecoregional management plans.

At a minimum, the core set of C&I will be evaluated for revision in accordance with the plan review and revision requirements provided in Chapter 6.

1.7 – Statewide Ownerships and Management Unit Boundaries

Management of the natural resources of state public lands must be considered within the context of the land itself, the natural resource values that the lands provide, and the use of these natural resource values by people. Human or public interactions have a great impact upon the specific management purpose of DNR lands, whereby different areas of DNR land are managed for different natural resource values with different management purposes and objectives. Distinct management zones within DNR ownership are state forest lands, state parks, state game areas, and wildlife refuges and floodings, each with specific staff and resources necessary to accomplish their specific mission. Management of these distinct state-owned areas within a landscape-scale context must also take into consideration different interspersed ownerships (including private, corporate, conservancy and Federal lands).

The DNR is the largest single land owner in the state, holding title to approximately 4.5 million surface acres of land and more than six million acres of subsurface mineral rights (Figure 1.2). A discussion of specific boundaries and administrative responsibilities for public and private land ownership and management are described in Appendix F.

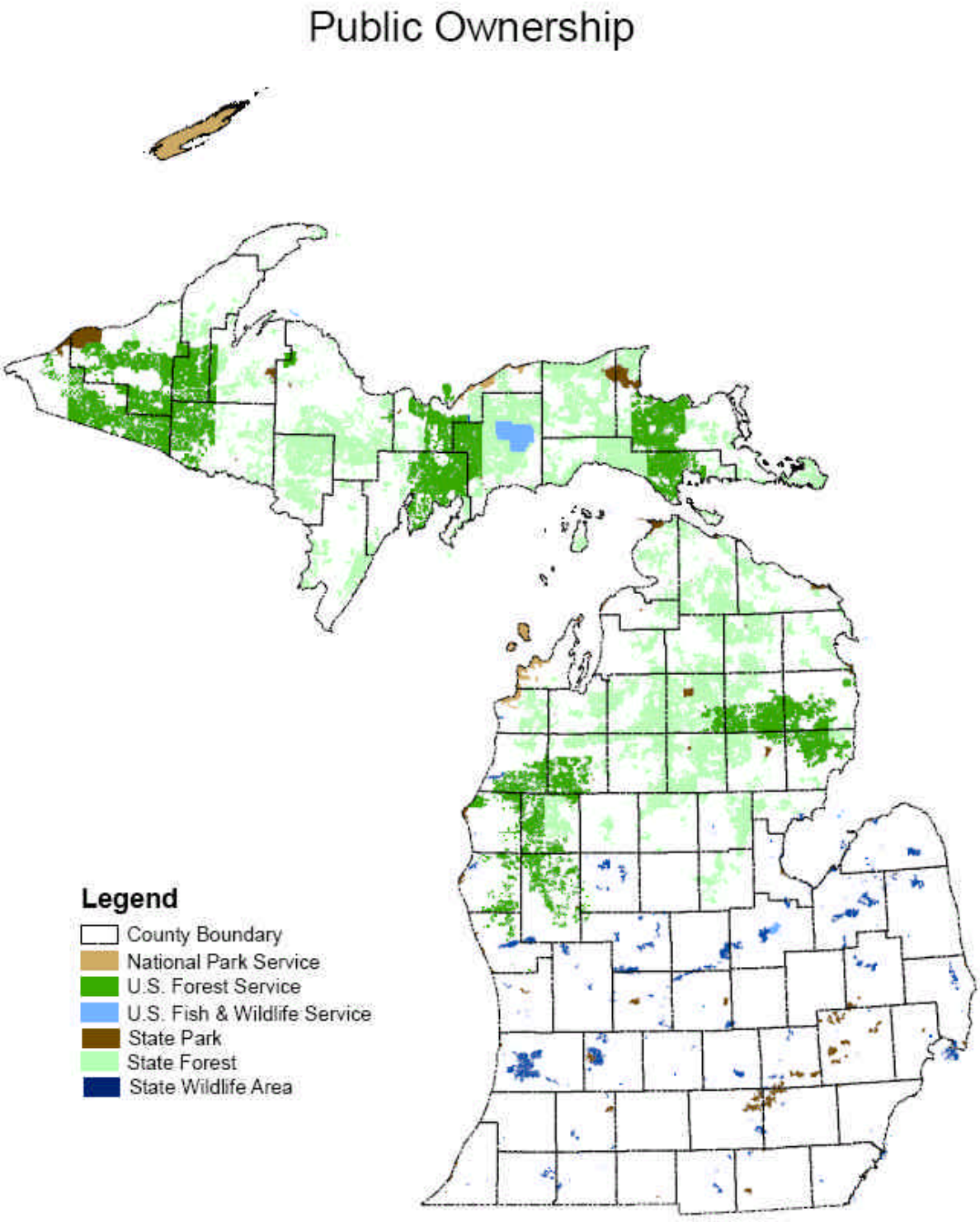

Figure 1.2. Michigan's Public Lands.
(Michigan DNR, 2004)